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The American Foundrymen's Association is not responsible for any statement or opinion that may be advanced by any contributor to this Journal.

PROCEEDINGS OF THE PITTSBURG FOUNDRYMEN'S ASSOCIATION.

The regular monthly meeting of the Pittsburg Foundrymen's Association was held Monday evening, April 24, at the regular quarters, Frohsinn Hall, Pittsburg. The attendance was very good. M. A. Moran, foreman of the foundry department of the Keystone Bridge Co., Pittsburg, was elected an associate member. There was some discussion about the financial end of the entertainment of the American Foundrymen's Association whose annual convention is to be held in Pittsburg next month. It was stated that the subscription had been coming in satisfactorily, but that considerably more money was still needed. It was pointed out that these subscriptions are being solicited from firms and companies, and not from individuals. The secretary, F. H. Zimmers, announced that there might be some who should be invited to the convention whom the secretary of the national organization would have no means of reaching, and offered to send invitations to any parties whose names should be sent to him for that purpose.

There was no regular paper scheduled for the evening, and the president announced that a general discussion would be had on any subject which might be presented. Dr. Moldenke then

called attention to the system being installed in the General Electric Co.'s new foundry, of handling the sand by a bucket system, and asked for opinions as to the desirability of some such system for handling sand, in preference to the present system using scrapers, which consumes a great deal of power, and which is liable to vexatious interruption, owing to the chain breaking. He referred to the bucket system used in handling ore as very successful, and considered this an indication that it would be good for handling sand. Mr. Mathes stated that some time ago his concern had tried an automatic molding machine, which, so far as the general apparatus was concerned, was a failure; but there was used a bucket system in connection with a trough, for conveying the sand, and this had worked very well. Working in the trough was a wooden cylinder, about 6 inches in diameter and, say, 16 feet long, with flattened spikes driven in it, to convey the sand to where it was to be used. The action was thoroughly to "temper" or mix the sand.

Mr. Moran brought up the subject of sandless pig iron, and stated that in their work (the foundry department of the Keystone Bridge Co.) they had been using sandless pig iron altogether, and had found it very satisfactory. There were several advantages. They were unable to use the rule of one-eighth inch shrinkage to the foot, the shrinkage being considerably less than this, and, consequently, more uniform. The iron they had been getting showed a chill of, say, 1-16 inch depth, but the castings showed no chill at all, and were more readily machined. The pigs would break in two or three in unloading, and altogether the material did not have an inviting appearance, analysis having to be relied on entirely in gauging the metal. The melting ratio had been reduced to one to six or seven, showing a reduction in fuel, and there was a reduction in loss as well, the loss now being say 6 per cent, while with the old sand cast iron it was about 10 per cent. Mr. Kebler asked whether with the sandless pig iron they had to order a higher silicon, and Mr. Moran stated that the silicon analysis would be ordered the same as before. Mr. Frank

asked if the sandless iron cut the cupola more, and if there was any difficulty in this direction, to which it was replied that the results were the other way. The cupola worked easier, lasted just as long, the bottom dropped more readily, and there was less time needed, and the iron would run quicker. A great deal of their work consisted in name plates for bridges, which were rather thin, while the letters would stand out very sharp. Another class of work was sheaves, which had to have a feather edge, and this would be removed by filing later, to prevent cutting the ropes. The casting would be good, clear out to the edge, and soft enough to file.

Dr. Phillips stated that in his experience in the South they found in 1895 that they could not sell a sand-cast iron for open-hearth work, and consequently began casting with the machine. The first 30,000 tons he examined closely as it was made, and there was no chilling noticed whatever. It was graded as No. 1 and No. 2 foundry. The color was a dark gray. He mentioned that a few days ago Mr. Scott had taken him to the Lucy furnaces, and they had a couple of workmen break about 30 pigs, which showed no chill at all, the grain running out clear to the edge. It required several drops from a height of nine feet to break the pigs, and they broke with a rather dull thud rather than with a ring. He declared that the system of casting in molds was the greatest invention of the century for the benefit of the foundry trade, and was surprised the foundrymen had been so backward in actually demanding it.

Mr. Kebler said it was the fact that customers objected in many cases to iron cast in chills. He mentioned a small lot of iron which a customer had recently rejected because it had been cast in molds. It developed that this iron had been an off color, the sulphur being about .07 per cent and the silicon was .25 per cent. When dropped the pigs would break in pieces and there was a bluish color throughout. Dr. Phillips said that a sandless pig containing one-tenth silicon could not be told from dark gray foundry iron. They had made a large quantity which was guar-

anteed to be under 1.0 silicon and .05 sulphur, with carbon 2.75 graphitic and .50 combined.

Owing to the general interest manifested in the subject, it was thought well to devote an evening to its discussion, and Mr. Moran consented to present a paper on the use of sandless pig iron from his standpoint. Dr. Phillips was asked to contribute some statistics to the subject, covering the tonnage made under the system, and the furnaces now using it.

PROCEEDINGS OF THE WESTERN FOUNDRYMEN'S ASSOCIATION.

The regular monthly meeting of the Western Foundrymen's Association was held at the Great Northern Hotel, Chicago, April 19, at 7:30 p. m. Vice-President A. M. Thompson in the chair.

Those present were the following: James Frake; B. R. Marchand, Illinois Steel Co.; Hanson McDowell; C. J. Wolff, L. Wolff Mfg. Co.; R. J. Cleveland, Cleveland & Barr; C. H. Hopke, Western Foundry Co.; R. K. Thatcher, C. K. Pittman; Jas. E. Evans, Theodore Kauffman, S. Obermayer Co.; A. M. Thompson, Link Belt Machinery Co.; B. M. Gardner, The Iron Trade Review; H. S. Vrooman; E. J. Welch, A. Bolter & Sons; H. K. Maas, W. Barton, Siemens-Halske Electric Co.; W. H. Rooney, American Car & Foundry Co., Wells-French shops; A. W. Rom, with Jas. Frake, all of Chicago.

The meeting opened with a general discussion of methods to increase the interest in the work of the association among founders and to enlarge the membership. The result of the discussion was the following which was adopted: Resolved, That it is the sense of the association that some plan be formulated for the controlling of prices and also for the adoption of a uniform credit system.

The chair was authorized to appoint a committee of five, of which the president of the association is ex-officio a member, to suggest a plan for controlling the prices of castings, and for a uniform credit system, the committee being instructed to call a meeting of the foundrymen of Chicago to discuss these plans, when formulated.

Nominations for officers for the ensuing year were then called for, the following names being put in nomination: For president, A. M. Thompson, W. A. Jones, C. J. Wolff. For vice-president, R. J. Cleveland, James Frake, William Ferguson. For secretary, B. M. Gardner, J. E. Evans, H. S. Vrooman, O. T. Stantial.

For treasurer, R. J. Cleveland, O. T. Stantial. For directors, James Frake, A. M. Thomson, C. J. Wolff, C. H. Hopke, M. Salomon, B. R. Marchand, William Ferguson, F. G. Coffeen. For editing committee, B. M. Gardner, J. E. Evans, H. S. Vrooman, W. A. Jones, A. W. Rom.

The proposed amendment to the by-laws was defeated.

The secretary read a letter from John A. Penton, secretary of the American Foundrymen's Association, announcing that the time set for the annual meeting of that association is May 16, 17, 18 and 19, the meeting to be held at Pittsburg. Secretary Penton outlined the program for the meeting, and invited the members of the Western Foundrymen's Association to attend. A committee of arrangements for transportation, etc., from Chicago and the West, consisting of C. J. Wolff and W. A. Jones, had been appointed, and Mr. Wolff, for this committee, announced that arrangements had been made with the Pennsylvania road for rates to Pittsburg and return for the meeting.

In view of the fact that the convention of the American Foundrymen's Association will occur in the same week in which the annual meeting of the Western Foundrymen's Association would be held, the latter being the third Wednesday in May, the secretary was instructed to call the annual meeting on the second Wednesday, May 10.

PROCEEDINGS OF THE PHILADELPHIA FOUNDRYMEN'S ASSOCIATION.

The eighty-seventh meeting of the Foundrymen's Association was held at the Manufacturers' Club, in Philadelphia, on Wednesday, April 5, the president, P. D. Wanner, occupying the chair.

Mr. Wanner opened the meeting with a short address on

"CAST IRON PIPE AND CONSOLIDATION."

May 11, 1892, I read a paper on cast iron pipe at a meeting of the Board of Trade of Reading, Pa., which was published and freely commented upon, in which I said, among other things, the following:

Cast iron pipe commenced to be used for water works about the beginning of the present century. But 16 of these works were constructed in this country prior to the year 1800, and 87 up to the year 1850. The trade developed slowly until after 1850, when the large increase of water and of gas works made the demand for pipe proportionately large. The panic of 1857, followed by the Civil War, interrupted it materially, but after the war it became flourishing, and to such an extent that even the panic of the seventies did not seem to affect it until the year 1878. After that, owing probably to an overbuilding of water and gas works and the high price of pig iron, the trade remained quiet until the summer of 1881, when it became very active, and remained large and profitable until the end of 1887. These were seven years of unprecedented prosperity for the pipe manufacturers, but with them disappeared the large profits of the business—and yet from that time to the present the demand for pipe was large, and the number of water and gas works increased in the aggregate to 2,200 of water and 1,200 of gas, having a mileage of pipe of over 50,000, a distance twice around the world. The trade was also increased by a large demand from railroads, cities and towns for drainage, culvert and sewer purposes, but owing to the large number of new pipe foundries constructed throughout the country of late, and the increased capacity of the older ones, the

demand fell short of the supply. In other words, we have had overproduction. All the new foundries built since the boom of the eighties could have been spared and the money saved to the investors. Its present condition is full of anxiety, and has brought about some very desperate movements, particularly on the part of southern establishments. View the situation as we may, it clearly indicates that this once prosperous and profitable trade will become uncertain and of doubtful tenure, and that location, equipment and management will be essential elements tributary to the success of pipe foundries hereafter. I believe that the several sections of the country will have their respective works to which their trade will be necessarily confined, and even in that case such territory will probably have to abandon some of its present works.

I said this all but seven years ago. Few, if any, predicted the future of the trade better, and none did more to uphold prices during these years of depression than I, and having dismantled two pipe foundries (one of which was among the very first in the country), I should at least be permitted to run one foundry either in or outside of the consolidation. I believe, frankly, that the only hope for success in this trade for the future will lie in a combination that shall control the product and business of them all, either directly or indirectly. I have been in favor of such consolidation or control from the time I became interested in it. Its product is bulky and could naturally be limited to the sevral sections of the country or divisions of territory. I threfore maintained that it would be better that several sections should work together, or even in case of a few concerns here and there, than that they should all compete apart. This and all governments were created and are upheld by necessity. It will be so with both capital and labor and all trade or manufacturing interests in the future. It has been truly said that business is war, and to make it a success, warlike methods will have to be resorted to, and success will be on the side of those who have the largest guns or aggregation of capital; in other words, a combiantion of a greater part of the trade will

be able to dictate prices and a line of behavior to those outside, or crush them. It is no longer the survival of the fittest, but of that which can hold best and longest.

The panic of the seventies and consequent depression suggested a combination to the pipe trade, and accordingly a notice was issued to all the pipe men of the country to meet on December 17, 1879, at the Continental Hotel, Philadelphia Pa., at which the following, according to the minutes of the meeting, was agreed upon after a two days' session by all except the Warren Foundry & Machine Company, of Phillipsburg, N. J.; Matthew Addy, of the Cincinnati & New port Pipe Company, Cincinnati, Ohio, acting as chairman, and Dr. J. D. White, of the Camden Iron Works, Camden, N. J., acting as secretary—viz.:

"We, the undersigned cast iron pipe manufacturers of the United States, hereby agree to form an association for mutual benefit and protection, and more especially for the objects mentioned below:

"1. To devise some method to secrue more remunerative prices.

"2. To divide the work or assets realized for the letting of the work on a basis equitable to all.

"3. To prepare uniform specifications under which we shall all pledge ourselves to bid at public lettings.

"4. To prevent the expansion of present shops or the building of new ones."

The company above referred to not attending nor agreeing to join, the object of the meeting failed.

With the splendid revival of the trade during the eighties, no further effort was made to combine, outside of what was done by the Western pipe men, and later by the Southern. The want of a sufficient demand and consequent decline in prices prompted a meeting of the Eastern pipe men, for which a notice was issued to meet at the Astor House, New York, December 20, 1892, which was attended by representative men from the Warren Foundry & Machine Company of Phillipsburg, N. J.; McNeal Pipe & Foundry Company of Burlington, N. J.; Buffalo

Cast Iron Pipe Company of Buffalo, N. Y.; Utica Pipe & Foundry Company of Utica, N. Y.; Reading Foundry Company, Limited, of Reading, Pa.; R. D. Wood & Co. of Philadelphia, Pa.; Jackson & Woodin Manufacturing Company of Berwick, Pa., and also, by letter, the National Pipe & Foundry Company of Scottdale, Pa., and the Emaus Pipe Foundry Company of Emaus, Pa.

The meeting was organized by the election of William Runkle, of the Warren Foundry & Machine Company, as president; A. H. McNeal, of the McNeal Pipe & Foundry Company, as vice-president; George B. Hayes, of the Buffalo Pipe & Foundry Company, as treasurer, and P. D. Wanner, of the Reading Foundry Company, Limited, as secretary. A constitution and by-laws were adopted. The association was named the Eastern Cast Iron Pipe Founders' Association, the object being "the advancement of the interests of the cast iron pipe trade, the promotion of good will and harmony among its members, the encouragement of uniform customs and concerted action, and the collection of all information on matters of importance to the business," also the proper division of territory for the trade at large.

This association failed likewise for want of cohesiveness. Thus it appears that both of the efforts to combine, above referred to, failed because of a few concerns either opposing or failing to join.

In my opinion, it would have been of very great service to them had they been united and worked together. There would have been fewer losses, fewer foundries, less trouble and worriment, and more money for all of them.

In all financial, industrial and commercial affairs the order of the day is in the direction of co-operation and combinations, in spite of all attempted legal restrictions, political denunciations or other useless impediments. Their object can be defeated only by their own indiscretion, such as unwise or over-capitalization, or a demand for unreasonable profits. The whole movement is a result of the evolution and progress of the advanced state of business civilization.

Afterward, in commenting upon the condition of the cast iron pipe trade at the present, Mr. Wanner instanced the case of a recent letting at which the company representing the newly effected consolidation of foundries and an outside foundry were bidders, and the contract was awarded to the outside foundry at a price which was $2.22 lower than the other bids. After studying the condition of affairs thoroughly, Mr. Wanner was of the opinion that where an industry had in its producing capacity outgrown the demand for the product, the only way to save the business was to form a combination.

A discussion on the question, "Are foundrymen getting for castings prices consistent with the advanced prices of raw material? If not, why not?" brought out the fact that foundrymen in nearby towns were getting much better prices than the foundrymen of Philadelphia. The situation appeared to be somewhat improved, however, advanced prices being asked by a few foundrymen in the district.

A REVIEW OF THE FOUNDRY LITERATURE OF THE MONTH.

Iron Trade Review.

APRIL 13.—In this journal appears the tabulated report of the American Foundrymen's Association Committee on the standardized system of test bars, containing 17 tables, giving diameter, sectional areas, breaking strain and ultimate strength per square inch.

American Machinist.

APRIL 6.—An illustrated article by H. Bickle, showing how to sweep up a piston mold in the floor without using a drag, the cope to be rammed up on a smooth board.

APRIL 27.—An illustrated article by R. H. Palmer describes the process of molding a wheel segment.

The Foundry.

An illustrated article by James A. Murphy describes the method of making a large casting in loam.

An illustrated article by P. R. Ramp describes the proper manner of setting gaggers in order to secure the greatest benefit from their use.

R. H. Palmer has in this number an illustrated article describing the method of molding and casting a power press frame. The foregoing articles cannot be intelligibly reviewed without the aid of the illustrations.

Mr. E. C. Wheeler writes upon "A Chemist's Position in the Foundry." A chemist's activities are generally confined within so narrow a scope as to make it impossible for him to make himself so useful as he might under more favorable circumstances.

The chemist's advent in the foundry ought to increase confidence in the product. Disappointment has sometimes resulted from unwise experimenting. "The chemist, to be of advantage

to the firm, must be in the foundry, and must be intimately associated with the metal through the various stages of the process of production. Concerted action between the foundry foreman and the chemist would be productive of results of the highest value."

W. H. Harris writes on "Core-Making by Women." His experience in managing core rooms with female help had been eminently successful, in the making of small cores. On this class of cores girls are, on all accounts, preferable to boys; they will take greater interest in the work, and will produce with greater rapidity.

Oscar Oldman writes on "Handles for Iron Flasks, and Pins and Plates for Wood Flasks." A half-dozen cuts accompany this article.

"Setu Wright" has an article on "How Molders Should Treat the Foundry Foreman." The foreman has rights that the molder should respect. The antagonism against the foreman on the part of the workmen is largely at fault for the asperities of his temper. There would be far less difficulty if molders would faithfully endeavor to to a day's work that the foreman could accept, and would see to it that their work was well done.

Edwin L. Glover contributes another article on "Malleable Iron Mixtures," touching cursorily upon the various processes in the manufacture.

The Tradesman.

APRIL 1.—"Ramming" is the title of an article by E. H. Putnam. So difficult is it to acquire in perfection the art of ramming, that even the best of workmen keep to some one class of work, so far as possible. Molding heavy machine castings in green sand is generally considered to be the branch of molding requiring the highest order of skill, and some of the ablest and brainiest of the world's manufacturers followed this in their younger days, and any one of these will tell you that if they had been, in their best days, changed from their regular work to the

making of a stove top, or even of an oven lining, they would not have known how to ram it. They would have produced a casting that would have taxed the ingenuity of the mounter to get it into the stove. And, conversely, if the plate molder be set at work on heavy machinery, he will have to serve his apprenticeship over before he can hope to be adept; and one of the chief reasons for this is that the ramming required by the different classes of work is so dissimilar.

"A Convenient Makeshift" is the title of another article by the same writer. Here is illustrated and described the means by which he was enabled to make gears of different sizes by the use of a section of an old gear casting for a pattern. This sectional pattern had an eccentric bushing fitted in the hub, through which the sweep spindle passed. The teeth were built up a few at a time, the pattern being lifted and re-set again and again, till the full circuit was made, the distances being gauged by means of marks on the edge of a pulley ring pattern, set within the drag. The arms and hub and inner side of rim were formed by cores. The process of making the core-box for these arm cores, in plaster paris, is also described. After the first gear was made, the eccentric bushing was turned half round, when a gear of a different size was produced.

APRIL 15.—In this number Mr. Putnam discusses the question of venting molds. The vent wire should be used freely, but should never come in contact with the pattern. The wire should be as fine as can be conveniently used, and should not taper except at the point. A tapered wire is difficult to force through the sand, but the point should be sharp, so as to reduce the liability of iron getting into the vent. "The lighting of the vent does not help to vent the mold in the least, but simply serves to prevent explosions."